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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/590,668

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Andrew Childs

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04/28/2009

DYKEMA GOSSETT PLLC

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EXAMINER

WANG, CHUN CHENG

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

04/28/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/590,668

Applicant(s)

CHILDS ET AL.

Examiner

Chun-Cheng Wang

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This office action is in response to the Amendment filed on 04/13/2009. Claims 1-13 are pending.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-9 and 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Fukuda (US 4254105).

Claim 1: Fukuda discloses a multiple emulsion prepared by dissolving an oil-soluble emulsifier into oil component; adding water to the resulting solution to form a W/O emulsion; and finally adding this W/O emulsion to an aqueous solution which is prepared by dissolving a water-soluble emulsifier into water; and emulsifying the W/O emulsion as a dispersed phase (e.g. internal phase having two liquid phase: water and oil) into the aqueous solution (column 2, lines 62-67 and column 3, lines 1-12). Fukuda also discloses at least one saccharide is dissolved in the water phase of W/O emulsion that is the dispersed phase of the W/O/W emulsion. The saccharide addition improves the properties of the W/O/W emulsion by the fact that the formation of a complex between the saccharide and certain functional group, e.g., sorbitan portion, of the surface active agent through hydrogen bond increases mechanical strength of the inter-facial film of the W/O emulsion, allowing the W/O emulsion, that is dispersed phase of the W/O/W emulsion, to exist sufficiently stable in the dispersion medium (column 2, lines 30-52).).

Fukuda also further discloses a nutrient cream having high, 78%, w/o emulsion ratio. Surfactant sucrose fatty acid ester and distilled water are also used to form the emulsion (column 14, Example 10). The sucrose group of the sucrose fatty acid ester and water form strong hydrogen-bond thus forms an aqueous inter-facial film between the water and oil to stabilize the emulsion.

Claims 2-5: Fukuda discloses a multiple emulsion having a dispersing form of water-phase/oil-phase/water-phase (Abstract, line 1) with water as external phase and water-in-oil emulsion as internal phase with liquid phases comprising water (aqueous phase) and (non-aqueous phase).

Claims 6-7: The multiple emulsion comprises a dispersing form of water-phase/oil-phase/water-phase (Abstract, line 1) where water-in-oil emulsion is an internal phase with two liquid phases, i.e. polyaphron.

Claims 8 and 13: Fukuda discloses as an oil component, which is used for the formation of W/O emulsion, one or more of appropriate fats, oils and waxes (read on solid in the internal phase) may be selectively used for various purposes (column 4, lines 9-32).

Claims 9 and 12: Fukuda discloses the W/O/W emulsion having high 78% w/o emulsion (e.g. internal phase) ratio and 20% water (external phase) (column 14, Example 10).

Claim 11: Fukuda discloses to prepare W/O emulsion, i.e. prepare the internal phase, first. To a surfactant containing aqueous solution (e.g. external phase), the W/O emulsion was added under agitation, the W/O/W multiple emulsion was formed (e.g. polyaphron dispersion) (column 14, Example 10).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
6. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuda (US 4254105) in view of Barnett et al. (US 4999198).

The disclosure of Fukuda is adequately set forth in paragraph 3 and is incorporated herein by reference.

Fukuda is silent on component of the external phase is capable of reacting a component of the internal phase.

Barnett et al. disclose forming a polyaphron having a continuous phase and a disperse phase. A drug is carried in the dispersed phase. The polyaphron is placed in contact with a medium and the drug is transferred from the disperse phase into the medium (Abstract). Since polyaphrons, like other dispersed systems, are subject to interfacial instabilities, it is noted that

polymerization (at the interface) of the polyaphrons may significantly increase the life of the system (column 3, lines 19-30).

In light of the benefit, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to add monomers in external phase and internal phase to perform interfacial polymerization to stabilize the system.

Response to Arguments

7. Applicant's arguments filed 04/13/2009 have been fully considered but they are not persuasive.

8. Applicants alleged: "If the emulsions of Fukuda are diluted, the different phases will no longer be stable, and will coalesce into two separate phases, a water and an oil phase."

Response: Attention is drawn to column 6, lines 33-53: "the minimum volume percentage of the W/O emulsion ... infinitely small ...". Applicants did not provide any comparative data to support the allegation.

9. Applicants alleged: "A person of ordinary skill in the art knows that polyaphrons have the properties described, and that these properties distinguish polyaphron dispersions from emulsions."

Response: Attention is drawn to "Polyaphrons, as defined herein, are multi-phase systems. Basically, they consist of a dispersion of suspended phase such as tiny droplets of between about 1 μ m to 1 mm encased in a continuous phase." (Barnett et al., column 1, lines 22-25). Also, Fukuda disclose the formation of interfacial film (column 2, lines 39-52). The multiple

emulsion of Fukuda is a polyaphron dispersion without using the term of "polyaphron dispersion".

10. Regarding applicants' argument about claim 13: please see paragraph 3 of claims 9 and 12 rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chun-Cheng Wang whose telephone number is (571)270-5459. The examiner can normally be reached on Monday to Friday w/alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ling-Siu Choi/
Primary Examiner, Art Unit 1796

/Chun-Cheng Wang/
Examiner, Art Unit 1796

/CCW/